

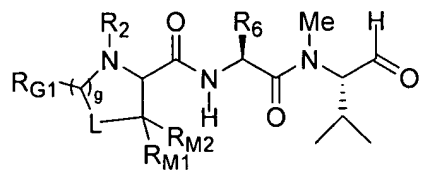
## AMENDMENTS TO THE CLAIMS

The following **Listing of Claims**, incorporating the claim amendments made under Article 19 of the PCT, will replace all prior versions, and listings, of claims in the application.

### Listing of Claims:

#### Claims 1-45 (Canceled)

46. **(Previously Presented)** An intermediate having the structure:



wherein g is 1, 2, 3 or 4;

R<sub>2</sub> is hydrogen, or a substituted or unsubstituted, linear or branched, cyclic or acyclic, or saturated or unsaturated lower alkyl, heteroalkyl, -alkyl(aryl) or acyl moiety;

R<sub>6</sub> is substituted or unsubstituted, linear or branched, cyclic or acyclic, or saturated or unsaturated lower alkyl;

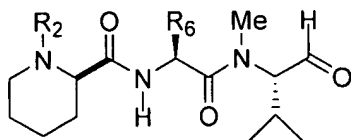
L is CR<sub>L1</sub>R<sub>L2</sub>, S, O or NR<sub>L3</sub>, wherein each occurrence of R<sub>L1</sub>, R<sub>L2</sub> and R<sub>L3</sub> is independently hydrogen or an aliphatic, alicyclic, heteroaliphatic, heteroalicyclic, aryl or heteroaryl moiety;

each occurrence of R<sub>G1</sub>, R<sub>M1</sub> and R<sub>M2</sub> is each independently hydrogen or an aliphatic, alicyclic, heteroaliphatic, heteroalicyclic, aryl or heteroaryl moiety; and

wherein any two adjacent R<sub>L1</sub>, R<sub>L2</sub>, R<sub>L3</sub>, R<sub>G1</sub>, R<sub>M1</sub> or R<sub>M2</sub> groups, taken together, form a substituted or unsubstituted alicyclic or heteroalicyclic moiety containing 3-6 atoms or an aryl or heteroaryl moiety.

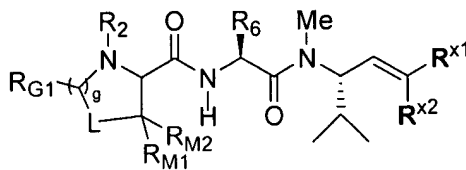
#### Claims 47-52 (Canceled)

53. **(Original)** The intermediate of claim 46 having the structure:



Claims 54-61 (Canceled)

62. (Previously Presented) An intermediate having the structure:



wherein  $R^{x1}$  and  $R^{x2}$  are independently hydrogen, aliphatic, alicyclic or aryl;

$g$  is 1, 2, 3 or 4;

$L$  is  $CR_{L1}R_{L2}$ ,  $S$ ,  $O$  or  $NR_{L3}$ , wherein each occurrence of  $R_{L1}$ ,  $R_{L2}$  and  $R_{L3}$  is independently hydrogen or an aliphatic, alicyclic, heteroaliphatic, heteroalicyclic, aryl or heteroaryl moiety;

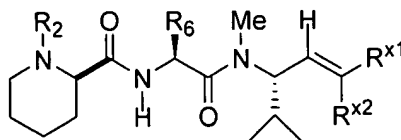
each occurrence of  $R_{G1}$ ,  $R_{M1}$  and  $R_{M2}$  is each independently hydrogen or an aliphatic, alicyclic, heteroaliphatic, heteroalicyclic, aryl or heteroaryl moiety; and

wherein any two adjacent  $R_{L1}$ ,  $R_{L2}$ ,  $R_{L3}$ ,  $R_{G1}$ ,  $R_{M1}$  or  $R_{M2}$  groups, taken together, form a substituted or unsubstituted alicyclic or heteroalicyclic moiety containing 3-6 atoms or an aryl or heteroaryl moiety;

$R_2$  is hydrogen,  $-(C=O)R_C$  or an aliphatic, alicyclic, heteroaliphatic, heteroalicyclic, aryl or heteroaryl moiety; wherein each occurrence of  $R_C$  is independently hydrogen,  $OH$ ,  $OR_D$ , or an aliphatic, alicyclic, heteroaliphatic, heteroalicyclic, aryl or heteroaryl moiety; wherein  $R_D$  is an aliphatic, alicyclic, heteroaliphatic, heteroalicyclic, aryl or heteroaryl moiety; and

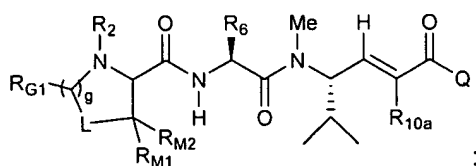
$R_6$  is hydrogen,  $-(C=O)R_E$  or an aliphatic, alicyclic, heteroaliphatic, heteroalicyclic, aryl or heteroaryl moiety, wherein each occurrence of  $R_E$  is independently hydrogen,  $OH$ ,  $OR_F$ , or an aliphatic, alicyclic, heteroaliphatic, heteroalicyclic, aryl or heteroaryl moiety; wherein  $R_F$  is an aliphatic, alicyclic, heteroaliphatic, heteroalicyclic, aryl or heteroaryl moiety.

63. (Previously Presented) The intermediate of claim 62 having the structure:



64. **(Currently Amended)** The intermediate of ~~claim 62 or 63~~ claim 63 wherein  $R^{x1}$  and  $R^{x2}$  are independently hydrogen, alkyl or aryl.
65. **(Currently Amended)** The intermediate of ~~claim 62 or 63~~ claim 63 wherein  $R^{x1}$  and  $R^{x2}$  are each hydrogen.
66. **(Currently Amended)** The intermediate of ~~any one of claims 46, 53, 62 and 63~~ claim 53 or 63 wherein  $R_2$  is hydrogen, or a substituted or unsubstituted, linear or branched, cyclic or acyclic, or saturated or unsaturated lower alkyl, heteroalkyl, -alkyl(aryl) or acyl moiety.
67. **(Previously Presented)** The intermediate of claim 66 wherein  $R_2$  is methyl, ethyl, propyl, butyl, pentyl, *tert*-butyl, *i*-propyl, -CH(CH<sub>3</sub>)Et, -CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>, -CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>, -CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>, -CH(CH<sub>3</sub>)CH(CH<sub>3</sub>)<sub>2</sub>, -C(CH<sub>3</sub>)<sub>2</sub>Et, -CH(CH<sub>3</sub>)cyclobutyl, -CH(Et)<sub>2</sub>, -C(CH<sub>3</sub>)<sub>2</sub>C≡CH, cyclohexyl, cyclopentyl, cyclobutyl or cyclopropyl.
68. **(Previously Presented)** The intermediate of claim 66 wherein  $R_2$  is methyl, ethyl, propyl or *i*-propyl.
69. **(Currently Amended)** The intermediate of ~~any one of claims 46, 53, 62 and 63~~ claim 53 or 63 wherein  $R_6$  is methyl, ethyl, propyl, butyl, pentyl, *tert*-butyl, *i*-propyl, -CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>3</sub>, -CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>, cyclohexyl, cyclopentyl, cyclobutyl or cyclopropyl; and  $R_2$  is methyl, ethyl, propyl, butyl, pentyl, *tert*-butyl, *i*-propyl, -CH(CH<sub>3</sub>)Et, -CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>, -CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>, -CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>, -CH(CH<sub>3</sub>)CH(CH<sub>3</sub>)<sub>2</sub>, -C(CH<sub>3</sub>)<sub>2</sub>Et, -CH(CH<sub>3</sub>)cyclobutyl, -CH(Et)<sub>2</sub>, -C(CH<sub>3</sub>)<sub>2</sub>C≡CH, cyclohexyl, cyclopentyl, cyclobutyl or cyclopropyl.

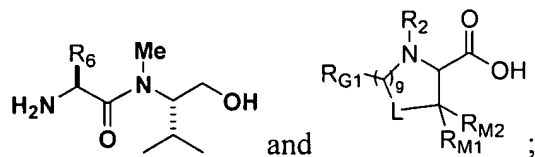
70. **(Previously Presented)** The intermediate of claim 69 wherein  $R_6$  is *tert*-butyl.
71. **(Currently Amended)** The intermediate of ~~any one of claims 46, 53, 62 and 63~~ claim 53 or 63 wherein  $R_{G1}$  is hydrogen, substituted or unsubstituted, linear or branched, cyclic or acyclic, or saturated or unsaturated lower alkyl or substituted or unsubstituted phenyl.
72. **(Previously Presented)** The intermediate of claim 71 wherein  $R_{G1}$  is hydrogen, methyl or phenyl.
73. **(Previously Presented)** The intermediate of claim 71 wherein  $R_{G1}$  is hydrogen.
74. **(Currently Amended)** The intermediate of ~~any one of claims 46, 53, 62 and 63~~ claim 53 or 63 wherein  $R_{M1}$  and  $R_{M2}$  are each independently hydrogen, hydroxyl, a substituted or unsubstituted, linear or branched, cyclic or acyclic, or saturated or unsaturated lower alkyl moiety; a substituted or unsubstituted phenyl moiety, or  $R_{M2}$  is absent when  $R_{M1}$  and the substituents on L, taken together, form a substituted or unsubstituted aryl or heteroaryl moiety.
75. **(Previously Presented)** The intermediate of claim 74 wherein  $R_{M1}$  and  $R_{M2}$  are each hydrogen.
76. **(Currently Amended)** The intermediate of ~~any one of claims 46, 53, 62 and 63~~ claim 53 or 63 wherein L is  $CR_{L1}R_{L2}$  wherein  $R_{L1}$  and  $R_{L2}$  are each independently hydrogen, substituted or unsubstituted, linear or branched, cyclic or acyclic, or saturated or unsaturated lower alkyl or substituted or unsubstituted phenyl.
77. **(Previously Presented)** The intermediate of claim 76 wherein L is  $CH_2$ .
78. **(Previously Presented)** A method for preparing a compound of formula **VI<sup>A</sup>**:



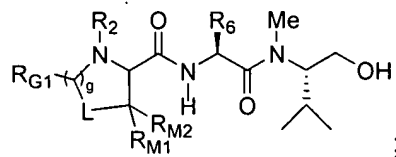
(VI<sup>A</sup>)

said method comprising steps of:

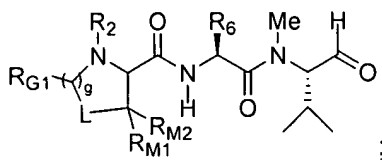
(a) reacting two compounds having the structures:



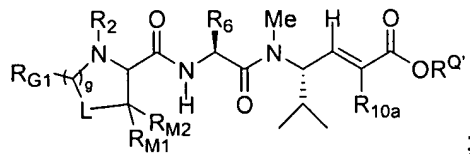
under suitable conditions to form a compound having the structure:



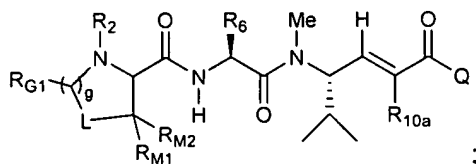
(b) oxidizing the compound formed in step (a) under suitable conditions to form a compound having the structure:



(c) subjecting the compound formed in step (b) to suitable olefin-forming conditions to form a compound having the structure:



(d) subjecting the compound formed in step (c) to suitable diversification reactions to generate the desired compound having the structure:



(VI<sup>A</sup>)

wherein  $g$  is 1 or 2;

R<sub>2</sub> and R<sub>6</sub> are independently substituted or unsubstituted linear or branched lower alkyl;

saturated or unsaturated lower alkyl;

L is CR<sub>L1</sub>R<sub>L2</sub>, S, O or NR<sub>L3</sub>, wherein each occurrence of R<sub>L1</sub>, R<sub>L2</sub> and R<sub>L3</sub> is independently hydrogen or an aliphatic, alicyclic, heteroaliphatic, heteroalicyclic, aryl or heteroaryl moiety;

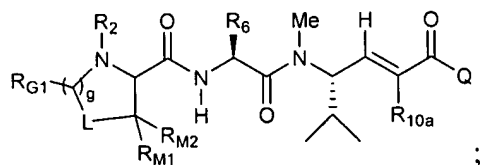
each occurrence of R<sub>G1</sub>, R<sub>M1</sub> and R<sub>M2</sub> is each independently hydrogen or an aliphatic, alicyclic, heteroaliphatic, heteroalicyclic, aryl or heteroaryl moiety; and

wherein any two adjacent R<sub>L1</sub>, R<sub>L2</sub>, R<sub>L3</sub>, R<sub>G1</sub>, R<sub>M1</sub> or R<sub>M2</sub> groups, taken together, form a substituted or unsubstituted alicyclic or heteroalicyclic moiety containing 3-6 atoms or an aryl or heteroaryl moiety.

79. **(Previously Presented)** The method of claim 78 wherein, in the step of oxidizing, the conditions comprise Swern or Dess Martin oxidizing conditions.

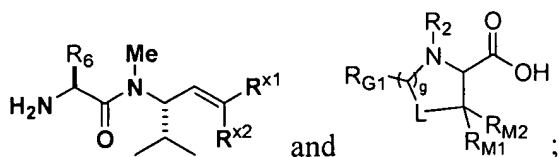
80. **(Previously Presented)** The method of claim 78 wherein, in step (c), the olefin-forming conditions comprise  $\text{Ph}_3\text{P}=\text{C}(\text{R}_{10a})\text{CO}_2\text{R}^{\text{Q}'}$ ; wherein  $\text{R}^{\text{Q}'}$  is hydrogen, lower alkyl or an oxygen protecting group; and  $\text{R}_{10a}$  is as defined generally above and in classes and subclasses herein.

81. **(Previously Presented)** A method for preparing a compound of formula VI<sup>A</sup>:

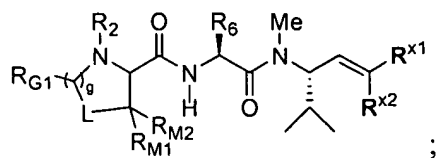
(VI<sup>A</sup>)

said method comprising steps of:

(a) reacting two compounds having the structures:

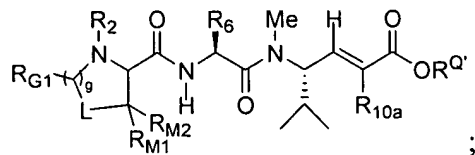


under suitable conditions to form a compound having the structure:

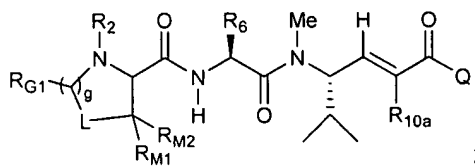


wherein  $R^{X1}$  and  $R^{X2}$  are independently hydrogen, alkyl, heteroalkyl, aryl or heteroaryl;

(b) converting the compound formed in step (a) under suitable conditions to form a compound having the structure:



(c) subjecting the compound formed in step (b) to suitable diversification reactions to generate the desired compound having the structure:



(VI<sup>A</sup>)

wherein  $g$  is 1 or 2;

$R^Q$  is hydrogen, lower alkyl or an oxygen protecting group;

$R_2$  and  $R_6$  are independently substituted or unsubstituted linear or branched lower alkyl;

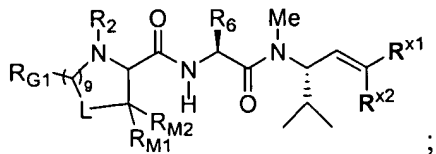
$R_{10a}$  is hydrogen or substituted or unsubstituted, linear or branched, cyclic or acyclic, or saturated or unsaturated lower alkyl;

$L$  is  $CR_{L1}R_{L2}$ ,  $S$ ,  $O$  or  $NR_{L3}$ , wherein each occurrence of  $R_{L1}$ ,  $R_{L2}$  and  $R_{L3}$  is independently hydrogen or an aliphatic, alicyclic, heteroaliphatic, heteroalicyclic, aryl or heteroaryl moiety;

each occurrence of  $R_{G1}$ ,  $R_{M1}$  and  $R_{M2}$  is each independently hydrogen or an aliphatic, alicyclic, heteroaliphatic, heteroalicyclic, aryl or heteroaryl moiety; and

wherein any two adjacent  $R_{L1}$ ,  $R_{L2}$ ,  $R_{L3}$ ,  $R_{G1}$ ,  $R_{M1}$  or  $R_{M2}$  groups, taken together, form a substituted or unsubstituted alicyclic or heteroalicyclic moiety containing 3-6 atoms or an aryl or heteroaryl moiety.

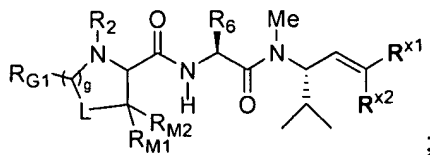
(i) subjecting the compound having the structure:



R\_{G1}-N(R\_2)-C(=O)-N(R\_6)-C(=O)-N(Me)-CH(R)-C(=O)H

CC(C)[C@@H](C(=O)N[C@@H](C(=O)N1C(R2)C(RG1)C(RM1)C(RM2)C1=O)C(=O)N[C@@H](C(=O)O[RQ])C=C

subjecting the compound having the structure:



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Client Ref. No.: HEAT-CIP/US NATL



